CSc Practical Worksheet 3(Solution)

A'S
Paper 1

Topic: Database & SQL & DBMS

1 A hospital is divided into two areas, Area A and Area B. Each area has several wards. All the ward names are different.

A number of nurses are based in Area A. These nurses always work on the same ward. Each nurse has a unique Nurse ID of `STRING` data type.

(a) Describe the relationship shown above.

Many to one

(b) A relational database is created to store the ward and nurse data. The two table designs for Area A are:

`A-WARD(WardName, NumberOfBeds)`

`A-NURSE(NurseID, FirstName, FamilyName,` **`WardName`**`)`

(i) Complete the design for the `A-NURSE` table. [1]

(ii) Explain how the relationship in **part (a)** is implemented.

The primary key `WardName` in the `A-WARD` table links to the foreign key `WardName` in the `A-NURSE` table.

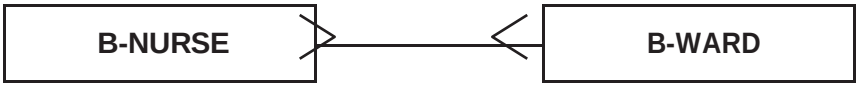
(c) In Area B of the hospital, there are a number of wards and a number of nurses.

Each Area B ward has a specialism.

Each Area B nurse has a specialism.

A nurse can be asked to work in any of the Area B wards where their specialism matches with the ward specialism.

The relationship for Area B of the hospital is:



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(i) Explain what the degree of relationship is between the entities `B-NURSE` and `B-WARD`.

Many to Many relationship

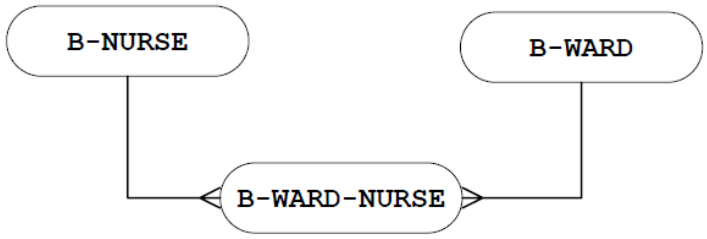
(ii) The design for the Area B data is as follows:

`B-NURSE(NurseID, FirstName, FamilyName, Specialism) B-WARD(WardName, NumberOfBeds, Specialism)`

`B-WARD-NURSE(WardName, NurseID)`

Complete the attributes for the third table. Underline its primary key. [2]

(iii) Draw the relationships on the entity-relationship (E-R) diagram.



[2]

(d) Use the table designs in **part (c)(ii)**.

(i) Write an SQL query to display the Nurse ID and family name for all Area B nurses with a specialism of 'THEATRE'.

```
SELECT NurseID, FamilyName
FROM B-NURSE
WHERE Specialism = 'THEATRE';
```

(ii) Fatima Woo is an Area B nurse with the nurse ID of 076. She has recently married, and her new family name is Chi.

Write an SQL command to update her record.

```
UPDATE B-NURSE
SET FamilyName = 'Chi'
WHERE NurseID = '076';
```

[3]